

U. S. ENVIRONMENTAL PROTECTION AGENCY
REGION 4, SCIENCE and ECOSYSTEMS SUPPORT DIVISION
ATHENS, GEORGIA 30605-2720

4SES-EI

NOV 25 2003

MEMORANDUM

SUBJECT: Transmittal: Five-Year Review Report, Second Five-Year Review Report
Geiger (C&M Oil) Site, Rantowles, South Carolina
SESD Project Number 03-1132

FROM: Jonathan Vail *J. Vail*
Air and Superfund Section
Environmental Investigations Branch
Science and Ecosystems Support Division

THRU: Mario Villamarzo, Chief *M. Villamarzo*
Air and Superfund Section
Environmental Investigations Branch
Science and Ecosystems Support Division

TO: William Joyner, RPM
South Site Management Branch
Waste Management Division

Please find attached the revised Five-Year Review Report, Second Five-Year Review Report for the Geiger (C&M Oil) Site, located in Rantowles, South Carolina. The comments from the State of South Carolina Department of Health and Environmental Control have been incorporated.

If you have any questions or comments, please contact me at (706) 355-8611.

Attachment

10114706



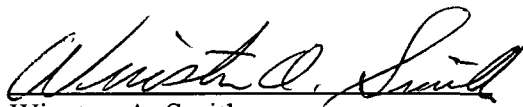
Five-Year Review Report
Second Five-Year Review Report
for
Geiger (C & M Oil) Site
Rantowles
Charleston County, South Carolina

October, 2003

PREPARED BY:

U.S. Environmental Protection Agency
Region 4
Athens, Georgia

Approved by:

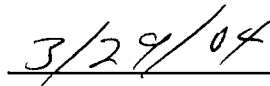


Winston A. Smith

Director

Waste Management Division

Date:



Five-Year Review Report

Table of Contents

List of Acronyms	-3-
Executive Summary	-5-
Five-Year Review Summary Form	-6-
I. Introduction	-8-
II. Site Chronology	-9-
III. Background	-9-
Physical Characteristics	-9-
Land and Resource Use	-10-
History of Contamination	-10-
Initial Response	-10-
Basis for Taking Action	-11-
IV. Remedial Actions	-11-
Remedy Selection	-11-
Remedy Implementation	-12-
System Operation/Operation and Maintenance (O&M)	-12-
V. Progress Since the Last Review	-12-
VI. Five-Year Review Process	-13-
VII. Technical Assessment	-14-
Technical Assessment Summary	-15-
VIII. Issues	-15-
IX. Recommendations and Follow-up Actions	-15-
X. Protectiveness Statement(s)	-15-
XI. Next Review	-15-
Attachments	-16-

List of Acronyms

ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CCHD	Charleston County Health Department
CFR	Code of Federal Regulations
COC	Contaminants of Concern
COE	U.S. Army Corps of Engineers
EPA	United States Environmental Protection Agency
MCL	Maximum Contaminant Level
MNA	Monitored Natural Attenuation
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OSWER	Office of Solid Waste and Emergency Response
PRP	Potentially Responsible Party
PSD	Performing Settling Defendant
QA/QC	Quality Assurance / Quality Control
RA	Remedial Action
RAO	Remedial Action Objective
RD	Remedial Design
RI/FS	Remedial Investigation / Feasibility Study
ROD	Record of Decision
SARA	Superfund Amendments and Re-authorization Act
SCDHEC	South Carolina Department of Health and Environmental Control
SCPCA	South Carolina Pollution Control Authority
SDWA	Safe Drinking Water Act

S/S	Solidification and Stabilization
VOC	Volatile Organic Compound

Executive Summary

Since the signing of the ROD on June 1, 1987, EPA has conducted additional field investigations in order to better characterize and define the extent of the groundwater contamination. The latest groundwater sample results, over the last several years, have indicated that there are no longer any organic contaminants of concern (COC). Lead has been the only inorganic COC consistently detected above drinking water standards and in only two out of approximately 27 monitoring wells. Also, the level of lead has been decreasing in one of the two contaminated wells (MW-6S), and is near drinking water standards. The other monitoring well (MW-2S), which is located in a relatively undeveloped area, has had an increase in concentration, however, temporary and permanent monitoring wells located between the site and this monitoring well did not show any detections of lead. Thus, it does not appear that there is a definable "groundwater plume", but very localized contamination, and therefore the area of contamination is extensively smaller than originally thought. Since only two of the approximately 27 monitoring wells are indicating concentrations above drinking water standards, a review of the necessity to keep the other wells should be considered and an additional investigation of the localized lead contamination should be conducted to determine the contributing factor. The additional investigation should include the sampling and analysis of several Geoprobe® installed temporary ground water wells near MW-2S to determine if any localized contamination exists. In addition, video documentation of the inside of the well to total depth to inspect the integrity of the well and to identify if some foreign matter (e.g. lead weight left in well from trying to fish a bailer out?) is the cause of the lead contamination.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name (from WasteLAN): GEIGER (C & M OIL)		
EPA ID (from WasteLAN): SCD980711279		
Region: 4	State: SC	City/County: Rantowles, Charleston
SITE STATUS		
NPL status: <input checked="" type="checkbox"/> Final <input type="checkbox"/> Deleted <input type="checkbox"/> Other (specify) _____		
Remediation status (choose all that apply): <input type="checkbox"/> Under Construction <input type="checkbox"/> Operating <input checked="" type="checkbox"/> Complete		
Multiple OUs? <input type="checkbox"/> YES <input type="checkbox"/> NO	Construction completion date: _9_ / _27_ / _1997_	
Has site been put into reuse? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
REVIEW STATUS		
Lead agency: <input checked="" type="checkbox"/> EPA <input type="checkbox"/> State <input type="checkbox"/> Tribe <input type="checkbox"/> Other Federal Agency _____		
Author name: Jonathan Vail		
Author title: Environmental Scientist	Author affiliation: U.S. EPA, Region 4, SESD	
Review period:** _5_ / _2003_ to _10_ / _2003_		
Date(s) of site inspection: _08_ / _14_ / _2003_		
Type of review: <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <input checked="" type="checkbox"/> Post-SARA <input type="checkbox"/> Pre-SARA <input type="checkbox"/> NPL-Removal only <input type="checkbox"/> Non-NPL Remedial Action Site <input type="checkbox"/> NPL State/Tribe-lead </div> <div style="margin-top: 5px;"><input type="checkbox"/> Regional Discretion</div>		
Review number: <input type="checkbox"/> 1 (first) <input checked="" type="checkbox"/> 2 (second) <input type="checkbox"/> 3 (third) <input type="checkbox"/> Other (specify) _____		
Triggering action: <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <input type="checkbox"/> Actual RA Onsite Construction at OU # _____ <input type="checkbox"/> Actual RA Start at OU# _____ </div> <div style="margin-top: 5px;"><input type="checkbox"/> Construction Completion <input checked="" type="checkbox"/> Previous Five-Year Review Report</div> <div style="margin-top: 5px;"><input type="checkbox"/> Other (specify) _____</div>		
Triggering action date (from WasteLAN): 10 / 22 / 1998		
Due date (five years after triggering action date): 10 / 22 / 2003		

* ["OU" refers to operable unit.]

** [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

Five-Year Review Summary Form, cont'd.

Issues:

Since only two of the approximately 27 monitoring wells are indicating concentrations above MCLs, a review of the necessity to keep the other wells should be considered.

Recommendations and Follow-up Actions:

The wells should be sampled once yearly for the next five years and since only two of the approximately 27 monitoring wells are indicating concentrations above MCLs, a review of the necessity to keep the other wells should be considered.

Protectiveness Statement(s):

The remedy at the Geiger Site is expected to be or is protective of human health and the environment, and in the interim, exposure pathways that could result in unacceptable risks are being controlled. The attainment of the groundwater cleanup goals or MCLs, through monitored natural attenuation may take up to 10 years to achieve. All threats at the site have been addressed through stabilization and capping of contaminated soil and sediments and there have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy.

Other Comments:

Five-Year Review Report

I. Introduction

The U.S. Environmental Protection Agency (EPA) has conducted a second five-year review of the remedial actions implemented at the Geiger (C & M Oil) Site (Geiger Site) in Charleston County, South Carolina. This five-year review was conducted from March 2003 through October 2003 pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) §121(c) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) §300.400(f)(4)(ii), and the Office of Solid Waste and Emergency Response (OSWER) directive 9355.7-03B-P (June 2001). This report documents the results of the review. The purpose of five-year reviews is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in five-year review reports. In addition, five-year review reports identify deficiencies found during the review, if any, and identify recommendations to address them.

Five-year reviews are conducted either to meet the statutory mandate under CERCLA §121(c) or as a matter of policy. The EPA is preparing this five-year review report pursuant to CERCLA §121 and the National Contingency Plan (NCP). CERCLA §121 states:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgement of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.

The EPA interprets this requirement further in the NCP; 40 CFR §300.430(f)(4)(ii) which states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

The first five-year review was signed on October 22, 1998, and was conducted as required by statute due to the fact that hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure. These statutory reviews are only required for remedies signed on or after the effective date of SARA, October 17, 1986. The Record of Decision (ROD) was signed in June of 1987, and ROD Amendments were signed in July of 1993 and in September of 1998. The Preliminary Close Out Report was signed September 14, 1998.

This is the second five-year review for the Geiger Site. The triggering action for this policy review is the signature date of the first five-year review report. The five-year review is required since remedial action has not achieved the cleanup standards set forth in the latest ROD amendment (1998), which changed the remedy from pump and treat, to Monitored Natural Attenuation (MNA) for residual groundwater contamination.

II. Site Chronology

Important site events and relevant dates in the site chronology are listed in Table 1.

Table 1: Chronology of Site Events

Event	Date
Initial discovery of problem or contamination	07/01/1979
Pre-NPL responses	08/01/1979 - 09/08/1983
NPL listing	09/21/1984
Removal actions	10/14/1987 - 05/16/1988
Remedial Investigation/Feasibility Study complete	09/24/1984 - 06/01/1987
ROD signature	06/01/1987
ROD Amendments	07/13/1993; 09/09/1998
Enforcement documents (CD, AOC, Unilateral Administrative Order)	07/21, 28/2000
Remedial design start	04/19/1988
Remedial design complete	09/14/1992
Superfund State Contract, Cooperative Agreement, or Federal Facility Agreement signature	02/1992
Actual remedial action start	03/31/1992
Construction dates (start, finish)	01/16/1994
Construction completion date	08/09/1994
Preliminary Close-out Report	09/14/1998
Deletion from NPL	
Previous five-year reviews	10/22/1998

III. Background

Physical Characteristics

The Geiger Site covers an area of five (5) acres and is located approximately ten miles west of Charleston, along Highway 162 in Rantowles, Charleston County, South Carolina (see Figure 1 in Attachments). The site consists of an affected area that is approximately 1.5 acres in size, triangular in shape and is bounded on two sides by ponds, and on the third side by a small rise, approximately five (5) feet higher than the Site area. The area around the Site is sparsely populated (less than 50 people) with approximately ten residences located west and southwest of the site and approximately ten residences located to the east and northeast with several small businesses within a half (0.5) mile of the Site along

Highway 162. The Site has very little topographic relief, and elevations on the Site range from approximately fifteen (15) to thirty (30) feet above mean sea level. The area is serviced by municipal water, though there are two private wells located up-gradient of the Site.

The Geiger Site is located in the Atlantic Coastal Plain physiographic province of South Carolina. The uppermost aquifer at the Site is a surficial, unconfined aquifer, approximately 40 to 50 feet thick, composed of clean to silty fine to medium sand with some clay lenses. Depth to groundwater varies seasonally and is approximately three feet below land surface. This surficial aquifer is underlain by the Cooper Marl, which acts as a confining layer.

Land and Resource Use

The land use of the site in 1969 was for waste oil incineration. By 1971, eight unlined lagoons were constructed to hold waste oil for the incineration process. Since 1983, the Site property was used as a storage area for construction equipment. In 1994, the site soils underwent solidification and stabilization and a gravel cap was placed over the treated soil. The surficial groundwater aquifer underlying the site is not currently used as a drinking water source. The projected land use is residential.

The vicinity of the Site is dominated by a mixed coniferous and deciduous forest habitat. Areas north, west and south of the Site are wooded, and swamp land is also found to the west surrounding the small stream draining the Site. Estuarine streams and their associated tidal wetlands are located approximately one mile to the north and south of the Site. Agricultural lands and borrow pits are scattered within a one mile radius of the Site. There are no major industries or other sources of employment nearby.

History of Contamination

In March 1969, the South Carolina Pollution Control Authority (SCPCA) permitted Adams Run Services, Inc. to incinerate waste oil at what is now the Geiger Site. Sometime between 1969 and 1971, eight unlined lagoons, each approximately one (1) foot deep and covering a total area 50 feet wide by 100 feet long, were constructed for the purpose of holding waste oil in connection with the incineration process. In late 1971, in response to complaints from area residents, the SCPCA ordered all incineration and waste deposition activities at the site to stop, and the owner was to take action to prevent spillage, leakage or seepage of oil from the site. In April 1974, a complaint was filed by a nearby property owner with the Charleston County Health Department (CCHD) about oil overflowing from the lagoons on the site. CCHD investigated the site and the site was ordered closed because of evidence of oil dumping and overflowing oil. C&M Oil Distributors, Inc. then purchased all reclaimable oil on the site and submitted recovery plans to the South Carolina Department of Health and Environmental Control (SCDHEC), formerly SCPCA, but reportedly received no response to their plans. In December 1979, SCDHEC requested C&M Oil to provide information on their intentions to clean up the site. C&M Oil claimed in January 1980, that they were unable to recover the waste oil and were not obligated to clean up the site.

Initial Response

EPA Region IV investigated the site in February 1980. Samples from two monitoring wells installed down-gradient from the site contained organic compounds and metals that were also found in the waste pits. Residential wells up-gradient of the site were sampled, but no organic compounds were

detected. Metals in these residential samples were at background levels. Waste oil in the lagoons was found to contain chemicals similar to those associated with automotive crankcases, brake fluids, and degreasing compounds. The total quantity of waste on the site was estimated at 149,600 gallons. The site was ranked using the Hazard Ranking System and received a score of 32.37.

Basis for Taking Action

Mr. George Geiger purchased the site in March 1982. Mr. Geiger proposed excavation and disposal of contaminated soil in the lagoons, but approval was not given by SCDHEC. In 1983, Mr. Geiger filled the lagoons with local soils, and the site has been used since then for storage of equipment used by his company (Pile Drivers, Inc.) At present, Mr. Geiger's daughter owns both the property and a portion of the company. The site was proposed for the National Priorities List (NPL) in September 1983 and finalized on the NPL in September 1984. A Remedial Investigation and Feasibility Study (RI/FS) of the Site was completed in 1987. Low levels of organics as well as metals (primarily lead and chromium) were detected in the soils and the groundwater. Contaminants were not detected in groundwater samples collected from residential wells adjacent to the site.

A potentially responsible party (PRP) search was conducted, which determined that there were no viable PRPs for causing the site contamination. The Environmental Protection Agency (EPA), therefore conducted the Remedial Investigation/Feasibility Study (RI/FS), as well as additional field investigations in order to better characterize and define the extent of the groundwater contamination.

IV. Remedial Actions

A Record of Decision (ROD) was signed in June of 1987, and a ROD Amendment was signed in July of 1993 and amended in September of 1998. A remedial alternative was selected in order to prevent direct contact exposure and inhalation of contaminants in the soil, potential ingestion of contaminated groundwater by on-site workers and potential future residents; prevent further leaching of contaminants to groundwater above drinking water standards, and to prevent potential direct contact exposure to environmental receptors. The alternative included:

- recovery of contaminated groundwater with on-site treatment and discharge to an off-site stream;
- on-site thermal treatment of excavated soils to remove organic contaminants;
- Solidification/Stabilization (S/S) of thermally-treated soil to reduce mobility of metals;
- During Remedial Design, S/S would be reviewed to determine if S/S alone would achieve the remedial action goals; and,
- During Remedial Design, soil cleanup goals would be developed.

Remedy Selection

The selected remedy established clean-up goals for contaminants in the groundwater based upon drinking water standards. The selected remedy eliminated the principal threat posed to human health and

the environment by preventing further migration of contaminants to the groundwater and by remediating groundwater to drinking water standards.

Treatability studies were conducted during the Remedial Design phase which determined that S/S alone would remediate the contaminated soils. Based on these studies, the ROD was amended on July 13, 1993, stating that thermal treatment would not be conducted, only S/S.

Remedy Implementation

In February 1992, EPA entered into a cooperative agreement with the Corps of Engineers (COE) to perform the Remedial Design/Remedial Action. After the final design was completed, the COE awarded the Remedial Action contract to McLaren/Hart Environmental Engineering Cooperation (McLaren/Hart) for Solidification/Stabilization of the soil. The company mobilized to the field for full scale treatment on January 16, 1994. Treatment was completed on April 23, 1994 followed by placement of a gravel cap over the treated soil, which was completed on August 5, 1994. The Pre-final inspection, conducted on August 9, 1994 did not discover any significant outstanding items and therefore served as the Final Inspection. Both the Final Construction Report and the Interim Remedial Action Report were approved by EPA and SCDHEC on September 29, 1997. Quality control analytical sampling of the treated soil was conducted throughout the solidification activities. The QA/QC program used was rigorous and in conformance with EPA and State standards; therefore, EPA and the State determined that all analytical results were accurate to the degree needed to assure satisfactory execution of the RA and are consistent with the ROD and the RD plans and specifications.

System Operation/Operation and Maintenance (O&M)

Because the soil has been treated to prevent further leaching of contamination to the groundwater, and because additional sampling conducted by EPA shows there is only one remaining Contaminant of Concern (COC), consistently detected above drinking water standards in only two very small localized areas, one of which is near drinking water standards, EPA issued another ROD amendment on September 9, 1998, changing the remedy from pump and treat to Monitored Natural Attenuation (MNA). EPA believes that this is the most cost-effective means of addressing the residual groundwater contamination. The Preliminary Close Out Report, dated September 14, 1998 and the Operation and Maintenance (O & M) Plan dated September 1998 were approved by the SCDHEC.

V. Progress Since the Last Review

The protectiveness statement from the last five-year review was as follows: "Since the overall level of groundwater contamination has been decreasing since the signing of the original ROD in 1987, it is believed that the Remedial Action at this Site is protective of human health and the environment."

EPA, since the signing of the ROD on June 1, 1987, has conducted additional field investigations in order to better characterize and define the extent of the groundwater contamination. The latest groundwater sample results, have indicated that there are no longer any organic contaminants of concern. Lead has been the only inorganic COC consistently detected above drinking water standards and in only two out of approximately 27 monitoring wells (see Figure 2 in Attachments). Also, the level of lead has been decreasing in one of the two contaminated wells (MW-6S), and is near drinking water standards. The other monitoring well (MW-2S), which is located in a relatively undeveloped area, has had an

increase in concentration, however, temporary and permanent monitoring wells located between the site and this monitoring well did not show any detections of lead. Thus, it does not appear that there is a definable "groundwater plume", but very localized contamination, and therefore the area of contamination is extensively smaller than originally thought. Since only two of the approximately 27 monitoring wells are indicating concentrations above MCLs, a review of the necessity to keep the other wells should be considered. During the last five-year review, the contaminants of concern and their respective Maximum Contaminant Levels (MCLs) are: lead (15 ug/l) and cadmium (5 ug/l). Table 2 presents the sampling results for these two wells since 1997.

Table 2. Summary of the Groundwater Concentrations for Monitoring Wells Where COCs are Above MCLs.

Contaminant	Monitor Well	MCL (ug/l)	Concentration (ug/l)						
			3/1997	3/1999	3/2000	11/2000	5/2001	3/2002	3/2003
Cadmium	MW-2S	5	12	3	--	1.4	1.9	2.9	4.5
Lead	MW-2S	15	240	96	96	220	120	170	170
Cadmium	MW-6S	5	--	--	--	NS Dry	1	4.3	--
Lead	MW-6S	15	33	34	19	NS Dry	97	150	17

-- = Not Detected.

NS Dry = Not Sampled, well was dry.

VI. Five-Year Review Process

The Geiger five-year review was lead by Jonathan Vail, Environmental Scientist and William Joyner, Remedial Project Manager. The following team members assisted in the review:

Brian Striggow, EPA;
Keisha Long, SCDHEC Representative; and,
Minda Johnson-Schmiedel, SCDSHEC Representative

This five-year review consisted of the following activities: a review of relevant documents (see Attachment A); interviews with local government officials and neighbors and a site inspection. The completed five-year review report is available in the information repository. Notice of its completion has been placed in the local newspaper and local contacts have been notified by fact sheet.

The following individuals were contacted either by telephone or in person as part of the five-year review:

Kay Shealy, Secretary/Treasurer, Pile Drivers Inc. (Geiger);
Quadalupe Castrulta, Resident near MW2 cluster; and,
Henry Gilliard, resident near MW6 cluster.

Representatives of EPA and SCDHEC took part in the site inspection on August 14, 2003. During the site inspection, the location of the former source area, monitoring wells and the recently

developed residential areas were observed. The former source area was found to be used as a storage area for heavy machinery and equipment. All groundwater monitoring wells were found with well covers intact and locked. No problems or odors were observed

The following applicable or relevant and appropriate requirements (ARARs) were reviewed for changes that could affect protectiveness:

Safe Drinking Water Act (40 CFR Parts 141); and
South Carolina Groundwater Standards (SCDHEC)

A review of current Federal and South Carolina drinking water regulations reveals the remedial goals for the contaminants of concern for groundwater, established in the ROD Amendment (September 1998) are the same as the current drinking water standards. These include remedial goals for the following contaminants of concern: lead (15 ug/l) and cadmium (5 ug/l).

VII. Technical Assessment

The following conclusions support the determination that the remedy at the Geiger Site remains protective of human health and the environment:

Question A: Is the remedy functioning as intended by the decision documents?

The review of documents, ARARs, additional field investigations, and the results of the site inspection indicates that the remedy is functioning as intended by the ROD, as modified by the ROD Amendments. The Solidification/Stabilization of the contaminated soils and sediments has achieved the remedial objectives to minimize the migration of contaminants to groundwater and surface water and prevent direct contact with, or ingestion of, contaminants in soil and sediments.

Because the soil has been treated to prevent further leaching of contamination to the groundwater, and because additional sampling conducted by EPA shows there is only one remaining Contaminant of Concern (COC) consistently detected above drinking water standards in only two very small localized areas, one of which is near drinking water standards, EPA believes that Monitored Natural Attenuation (MNA) is the most cost-effective means of addressing the residual groundwater contamination.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of remedy selection still valid?

There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. There have been no new contaminants, sources, or exposure pathways identified as part of this five-year review.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

No ecological targets were identified during additional field investigations and none were identified during the five-year review, and therefore monitoring of ecological targets is not necessary.

No weather-related events have affected the protectiveness of the remedy. There is no other information that calls into question the protectiveness of the remedy.

Technical Assessment Summary

According to the data reviewed, the many years of groundwater sampling events, the site inspection, and the interviews, the remedy is functioning as intended by the ROD, as modified by the ROD Amendments. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. The ARARs for groundwater contamination have nearly been met. There have been no changes in the toxicity factors for the contaminants of concern that were used in the baseline risk assessment, and there have been no changes to the risk assessment methodology that could affect the protectiveness of the remedy. There is no other information that calls into question the protectiveness of the remedy.

VIII. Issues

Since only two of the approximately 27 monitoring wells are indicating concentrations above MCLs, a review of the necessity to keep the other wells should be considered.

IX. Recommendations and Follow-up Actions

The wells should be sampled once yearly for the next five years and since only two of the approximately 27 monitoring wells are indicating concentrations above MCLs, a review of the necessity to keep the other wells should be considered.

X. Protectiveness Statement(s)

The remedy at the Geiger Site is expected to be or is protective of human health and the environment, and in the interim, exposure pathways that could result in unacceptable risks are being controlled. The attainment of the groundwater cleanup goals or MCLs, through monitored natural attenuation may take up to 10 years to achieve. All threats at the site have been addressed through stabilization and capping of contaminated soil and sediments and there have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy.

XI. Next Review

The next five-year review for the Geiger Superfund Site is required by October 2008, five years from the date of this review.

Attachments

Documents Reviewed:

Final Remedial Investigation Report the Geiger (C&M Oil) Site; Charleston, South Carolina, July 1, 1986

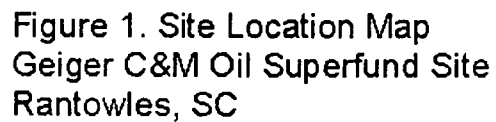
Record of Decision for the Geiger (C&M Oil) Site; Rantowles, South Carolina, June 1, 1987.

Amendments to the Record of Decision for the Geiger (C&M Oil) Site; Rantowles, South Carolina, 07/13/1993; 09/09/1998.

Preliminary Close Out Report for the Geiger (C&M Oil) Site; Rantowles, South Carolina, August, 1998.

Operations and Maintenance Plan the Geiger (C&M Oil) Site; Rantowles, South Carolina, September, 1998.

Five Year Review Report (Type1) the Geiger (C&M Oil) Site; Rantowles, South Carolina, October, 1998.





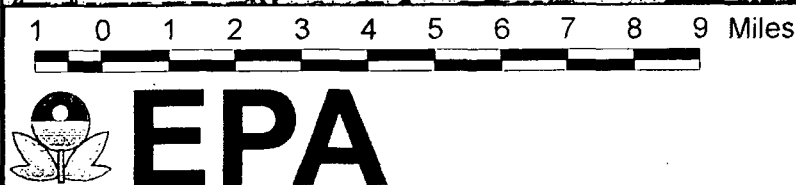
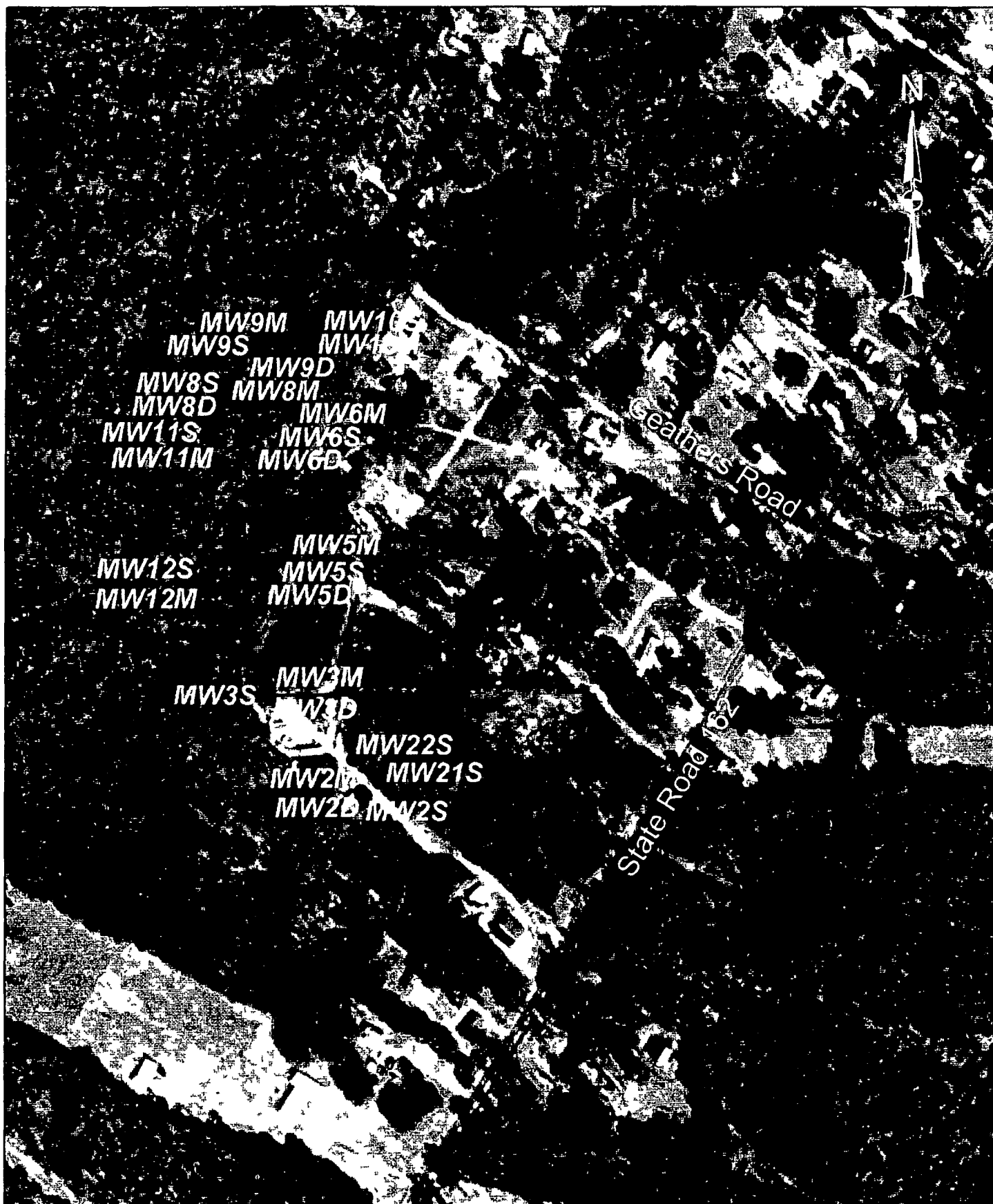


Figure 1. Site Location Map
Geiger C&M Oil Superfund Site
Rantowles, SC



200 0 200 400 600 800 1000 Feet



EPA

● Monitoring Wells
 □ Approx Property Boundary

**Figure 2.. Area Location Map
 Geiger C&M Oil Superfund Site
 Rantowles, SC**